



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

April 6, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: White Castle System, Inc. / 073-18775-00039

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 8/11/03

April 6, 2004

Mr. Michael Smith
White Castle System, Inc.
555 West Goodale Street
Columbus, Ohio 43215

Re: Registered Operation Status,
073-18775-00039

Dear Mr. Smith:

The application from White Castle System, Inc., received on March 3, 2004, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following bread making operation located at 809 North Melville, Rensselaer, Indiana, is classified as registered:

- (a) One (1) natural gas-fired boiler, identified as B001, with a maximum heat input capacity of 1.5 million British thermal units per hour (mmBtu/hr), constructed in 1984, and venting to stack #2;
- (b) One (1) natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 mmBtu/hr, with a maximum baking rate of 3,640 pounds of bread per hour, constructed in 1984, and venting to stack #1;
- (c) Three (3) flour storage silos each with a capacity of 110,000 pounds, with a pneumatic conveying system with a filter fabric on each silo. These silos were constructed in 1984; and
- (d) Flour handling system, which includes two (2) weigh feeders, two (2) flour mixers with a total capacity of 3,640 pounds per hour, each emission unit is controlled by a dedicated filter fabric.

The following conditions shall be applicable:

- (a) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (b) Pursuant to 326 IAC 6-3-2 (Process Operations), the PM emission Flour Handling and Mixing operations, which includes two (2) Weigh Hoppers and two (2) Mixers shall be limited to 6.12 pounds per hour at a process weight rate of 1.82 tons per hour.

The pounds per hour limitation shall be calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and

P = process weight rate in tons per hour

- (c) Pursuant to 326 IAC 6-2-4 (Indirect Heating Facilities), the PM emissions from Boiler B001 shall be limited to 0.6 pound per million British thermal units (lb/mmBtu), or 0.90 pound per hour (lb/hr).
- (d) Any change or modification which may increase the potential volatile organic compounds emissions to 25 tons per year or more from the equipment covered in this registration must be approved by the Office of Air Quality (OAQ) before such change may occur.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant 326 IAC 2-5.5-4(a)(3)). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

APD

cc: File - Jasper County
Jasper County Health Department
Air Compliance – Wanda Stanfield
Permit Tracking
Compliance Data Section
Office of Enforcement

Registration Annual Notification

This form should be used to comply with the notification requirements 326 IAC 2-5.5-4(a)(3)

Company Name:	White Castle System, Inc.
Address:	809 North Melville
City:	Rensselaer
Authorized individual:	Michael Smith
Phone #:	(614) 559-2675
Registration #:	073-18775-00039

I hereby certify that **White Castle System, Inc.** is still in operation and is in compliance with the requirements of Registration **073-18775-00039**.

Name (typed):
Title:
Signature:
Date:

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: White Castle System, Inc.
Source Location: 809 North Melville, Rensselaer, Indiana 47978
County: Jasper
SIC Code: 2051
Registration No.: 073-18775-00039
Permit Reviewer: Aida De Guzman

The Office of Air Quality (OAQ) has reviewed an application from White Castle System, Inc. relating to the operation of a bread making operation, which includes the following emission units:

Unpermitted Emission Units and Pollution Control Equipment

- (a) One (1) natural gas-fired boiler, identified as B001, with a maximum heat input capacity of 1.5 million British thermal units per hour (mmBtu/hr), constructed in 1984, and venting to stack #2;
- (b) One (1) natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 mmBtu/hr, with a maximum baking rate of 3,640 pounds of bread per hour, constructed in 1984, and venting to stack #1;
- (c) Three (3) flour storage silos each with a capacity of 110,000 pounds, with a pneumatic conveying system with a filter fabric on each silo. These silos were constructed in 1984; and
- (d) Flour handling system, which includes two (2) weigh feeders, two (2) flour mixers with a total capacity of 3,640 pounds per hour, each emission unit is controlled by a dedicated filter fabric.

Enforcement Issue

- (a) During the source review of their environmental records, the source discovered that it was operating without the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled Unpermitted Emission Units and Pollution Control Equipment.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
1	Baking Oven	34	1.3	2,500	35-450
2	Boiler	34	0.5	1,000	500

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 3, 2004 with additional information received on March 10, 2004; and March 12, 2004.

Emission Calculations

See Page 1 through 6 TSD Appendix A of this document for detailed emission calculations.

Potential to Emit of the Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential to Emit (tons/yr)
PM	9.1
PM-10	9.2
SO ₂	0.012
VOC	24.2
CO	1.7
NO _x	2.0

HAPs	Potential to Emit (tons/yr)
Hexane	0.03

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM and PM10 are each greater than 5 tons per year but less than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. Therefore, a Registration will be issued; or
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of Volatile Organic Compounds (VOC) are greater than 10 tons per year but less than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. Therefore, a registration will be issued.

County Attainment Status

The source is located in Jasper County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment

Lead	Not Determined
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- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Jasper County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.
- (b) Jasper County has been classified as attainment or unclassifiable for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity):

Pollutant	Emissions (tons/yr)
PM	0.142
PM-10	0.254
SO ₂	0.012
VOC	24.2
CO	1.7
NO _x	2.0
Single HAP	0.03
Combination HAPs	0.03

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Part 70 Permit Determination

- (a) 326 IAC 2-7 (Part 70 Permit Program)
This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:
- (1) each criteria pollutant is less than 100 tons per year,
 - (2) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
 - (3) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60):
- (1) 40 CFR Part 60.40c, Subpart Dc – Standards of Performance for Small Industrial –Commercial-Institutional Steam Generating Units, for which construction, modification or reconstruction is commenced after June 9, 1989, and that has a maximum heat input capacity of 100 mmBtu/hr or less, but greater than 10 mmBtu/hr.

The one (1) boiler, identified as B001 is not subject to this NSPS, as its heat input capacity of 1.5 mmBtu/hr is less than 10 mmBtu/hr, and it was constructed in 1984, which is before the applicability date of June 9, 1989.

- (2) There are no other possible NSPS rules that may be applicable to this bread making plant.
- (b) National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63):
 - (1) 40 CFR Part 63, Subpart DDDDD – Industrial, Commercial, and Institutional Boilers and Process Heaters. The one (1) boiler, identified as B001 is not subject to this NESHAP, as it is not located in a source that is major for HAPs.
 - (2) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) applicable to this source.

State Rule Applicability – Entire Source

- (a) 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
This source is not subject to 326 IAC 2-2, as it does not emit any pollutant at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories.
- (b) 326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants)
This source was constructed prior to July 27, 1997 and the potential HAP emissions from the entire source are less than the major source thresholds. Therefore, the requirements of 326 IAC 2-4.1 are not applicable.
- (c) 326 IAC 2-6 (Emission Reporting)
This source is located in Jasper County and the potential to emit for each criteria pollutants, except PM is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
 - (1) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability -

- (a) 326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)
This rule applies to new facilities as of January 1, 1980, which have potential emissions of 25 tons of VOC per year, located anywhere in the state which are not otherwise regulated by other provisions of article 326 IAC 8. The baking oven is not subject to 326 IAC 8-1-6 as it emits less than 25 tons of VOC per year.

- (b) 326 IAC 6-3-2 (Process Operations)
(1) This rule mandates a PM emission limit of 6.12 pounds per hour at a process weight rate of 1.82 tons per hour for the Flour Handling and Mixing (2 Weigh Hoppers and 2 Mixers).

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

These operations are in compliance with 326 IAC 6-3, as the total uncontrolled PM emissions of 9.038 tons/year are less than the PM allowable of 6.12 lb/hr (26.8 tons/year). In addition, these operations are controlled by fabric filters.

- (2) The flour pneumatic conveying process is exempted from 326 IAC 6-3 as it emits PM/PM10 less than 0.551 pounds per hour or an equivalent of 2.4 tons/year.
- (c) 326 IAC 6-2-4 (Indirect Heating Facilities)
This rule mandates a PM emissions limit from indirect heating facilities constructed after September 21, 1983, using the following equation:

$$\begin{aligned} Pt &= 1.09/Q^{0.26} \\ &= 1.09/1.5^{0.26} \\ &= 0.98 \text{ lb/mmBtu, this limit however, should not exceed } 0.6 \text{ lb/mmBtu for} \\ &\quad \text{heat input less than } 10 \text{ mmBtu/hr} \end{aligned}$$

The boiler, identified as B001, constructed in 1984 shall have a PM emissions limit of 0.6 lb/mmBtu.

Using Natural Gas as Fuel:

$1.9 \text{ lb of PM/MMCF} * \text{MMCF}/1000 \text{ MMBtu} = 0.0019 \text{ lb/mmBtu} < \text{the PM allowable of } 0.6 \text{ lb/mmBtu.}$ Therefore Boiler B001 is in compliance with this rule.

Conclusion

The **operation** of this bread making plant shall be subject to the conditions of the **Registration 073-18775-00039**.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler**

Company Name: White castle System, Inc.
Address City IN Zip: 809 North Melville, Rensselaer, IN 47978
Registration No.: 073-18775
Plt ID: 073-00490
Reviewer: Aida De Guzman
Date Application Received: March 3, 2004

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

1.5

13.1

Boiler

Pollutant

Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
				100.0		
				**see below		
Potential Emission in tons/yr	0.012	0.050	0.004	0.657	0.036	0.552

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 7/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Page 2 of 6 TSD App A

Company Name: White castle System, Inc.
Address City IN Zip: 809 North Melville, Renssellaer, IN 47978
Registration No.: 073-18775
Plt ID: 073-00490
Reviewer: Aida De Guzman
Date: March 3, 2004 **1.5 mmBtu/hr Boiler**

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	0.00	0.00	0.00	0.01	0.00

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: White castle System, Inc.
Address City IN Zip: 809 North Melville, Rensselaer, IN 47978
Registration No.: 073-18775
Plt ID: 073-00490
Reviewer: Aida De Guzman
Date Application Received: March 3, 2004

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

3.1

27.2

Bread Baking Oven

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
Potential Emission in tons/yr	0.026	0.103	0.008	**see below	0.075	1.141

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 7/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Page 4 of 6 TSD App A

Company Name: White castle System, Inc.
Address City IN Zip: 809 North Melville, Rensselaer, IN 47978
Registration No.: 073-18775
Plt ID: 073-00490
Reviewer: Aida De Guzman
Date: March 3, 2004

3.1 mmBtu/hr Bread Baking Oven

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	0.00	0.00	0.00	0.02	0.00

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

[illegible]